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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/992,060	11/21/2001	Robert W. Parish	7240 US	4859

30078 7590 06/24/2004  
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EXAMINER

CHEN, PO WEI

ART UNIT PAPER NUMBER

2676

DATE MAILED: 06/24/2004

*10*

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

09/992,060

Applicant(s)

PARISH ET AL.

Examiner

Po-Wei (Dennis) Chen

Art Unit

2676

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 April 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

Art Unit: 2676

### DETAILED ACTION

Claims 1-4 are pending in this application. Claims 1 and 4 are independent claims. This action is non-final.

The present title of the invention is "Image Alias Rejection Using Shaped Statistical Filtering".

The Group Art Unit of the Examiner case is now 2676. Please use the proper Art Unit number to help us serve you better.

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 3 are rejected under 35 U.S.C. 103(a) as being unpatentable over Deering (2002/0005854; refer to as Deering herein) in view of Berchin (US 5,375,067) and Wells et al. (US 5,164,717; refer to as Wells herein).

3. Regarding claim 1, Deering discloses a dithering system comprising:

An apparatus for image alias rejection of a high resolution (pp 0212 and 0268-0269);

Means for generating a dither signal; means for summing the dither signal with a dimensional component value of each data point for the high resolution to produce filtered data point values (pp 0140-0160; random number corresponds to dither signal);

Means for subsampling the filtered data point values to produce a desired lower resolution for display (pp 0111-0112 and Fig. 3 and 11; it is noted that the samples can be sub-

Art Unit: 2676

sampled in accordance with the resolution desired and by sub-sampling will provide a lower resolution).

Deering does not disclose waveform. Berchin discloses a method for controlling digital oscilloscope utilizing the waveform image (col. 1, ln. 59-col. 2, ln. 23). It would have been obvious to one of ordinary skill to modify Deering to substitute the sampling image for the sampling image of Berchin because Berchin teaches by utilizing the image will provide an accurate data on displaying waveform images (col. 1, ln. 45-46).

Deering does not disclose shaped dither. However, this is known in the art taught by Wells. Wells teaches a method and apparatus for vector aligned dithering that "the dither matrix is rectangular in shape to correspond to the shape of the vector" (lines 4-6 of abstract; while claim recites shaped dither, the term is broad enough to include a signal with a particular shape such as one disclosed by Wells). It would have been obvious to one of ordinary skill in the art to utilize the teaching of Wells to provide the function of making sure that the individual pixels which make up the vector are dithered with best elements (lines 50-56 of column 3). Also, both Poduska and Wells are directed to minimize the undesirable effects of the image.

4. Regarding claim 3, Deering discloses a dithering system comprising:

Generating means comprises a look-up table containing data corresponding to the dither signal (pp 0141).

Deering does not disclose shaped dither. However, this is known in the art taught by Wells, as statements presented above, with respect to claim 1 above are incorporated herein.

5. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Deering (2002/0005854; refer to as Deering herein), Berchin (US 5,375,067) and Wells et al. (US

Art Unit: 2676

5,164,717; refer to as Wells herein) as applied to claim 1 above and further in view of Cole (US 6,469,684; refer to as Cole herein).

6. Regarding claim 2, the combination of Deering, Berchin and Wells discloses shaped dither signal, as statement presented above, with respect to claim 1 above are incorporated herein. It is noted that the combination of Deering, Berchin and Wells does not disclose a plurality of linear feedback shift registers, each producing a random number output; and means for summing the random number outputs. However, this is known in the art taught by Cole. Cole disclose a sequence inversion circuitry that utilize multiple linear feedback shift registers to provide a pseudo-random signal (lines 49-67 of column 9 and lines 1-8 of column 10 and Fig. 7). It would have been obvious to one of ordinary skill in the art at the time of invention to modify Deering by substituting the random number generating of Cole for the random number generating of Deering because Cole teaches that by utilize the random number will reduce flicker of the display (lines 36-37 of column 2).

7. Regarding claim 4, statements presented above, with respect to claim 1 are incorporated herein.

#### ***Response to Arguments***

8. Applicant's arguments, filed April 9, 2004, with respect to the rejection(s) of claim(s) 1-4 under 35 U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Deering, Berchin and Wells.

Art Unit: 2676

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Po-Wei (Dennis) Chen whose telephone number is (703) 305-8365. The examiner can normally be reached on 9am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Matthew C Bella can be reached on (703) 308-6829. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 305-3900.

Po-Wei (Dennis) Chen  
Examiner  
Art Unit 2676

Po-Wei (Dennis) Chen  
June 17, 2004



MATTHEW C. BELLA  
SUPERVISORY PATENT EXAMINER  
TECHNOLOGY CENTER 2600